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October 30, 2002

Via Hand Delivery

Commissioner for Patents Washington, D.C. 20231

Re:

U.S. Patent Application No.: 09/439740

For: RECOMBINANT TRANSFERRINS, TRANSFERRIN HALF-

MOLECULES AND MUTANTS THEREOF

Inventors: Funk, Walter D. et al. Filed: November 15, 1999 Our Ref. No.: UVI-005CP2CN

Dear Sir:

I enclose herewith for filing in the above-identified application the following:

- 1. Information Disclosure Statement;
- 2. PTO Form 1449; and
- A Return Postcard.

No additional costs are believed to be due in connection with the filing of this Information Disclosure Statement. However, please charge any necessary fees in connection with the enclosed statement to our Deposit Order Account No. 12-0080. For this purpose, a

duplicate of this sheet is attached.

Respectfully submitted,

LAHIVE & COCKFIELD, LLF

Debra J. Milasineic, Esq. Registration No. 46,931 Attorney for Applicants

Date: October 30, 2002

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

It the application of: Funk, Walter D. et al.

erial No.: 09/439740

Filed: November 15, 1999

For: RECOMBINANT TRANSFERRINS, TRANSFERRIN HALF-MOLECULES AND

MUTANTS THEREOF

Attorney Docket No.: UVI-005CP2CN

Group Art Unit: 1653

Examiner: Bugaisky, Gabriele E.

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Commissioner for Patents Washington, D.C. 20231

VIA HAND DELIVERY

INFORMATION DISCLOSURE STATEMENT

Dear Sir:

For the Examiner's convenience in reviewing this continuation application, Applicant submits a consolidated PTO Form 1449, listing all references cited during the prosecution of the parent application. The present application is a Continuation of U.S. Serial No.08/175158, filed December 28, 1993 (Atty. Docket No. UVI-005CP2), which is a Continuation-In-Part of U.S. Application Serial Number 07/832029 filed February 6, 1992, which is a Continuation-In-Part of U.S. Application Serial Number 07/652869 filed February 8, 1991. All references listed on the enclosed PTO Form 1449 have been previously cited by or submitted to the Office in the prior application, and, in accordance with 37 CFR §1.98(d), copies of the of the references are not enclosed but will be provided upon request.

180.00 CH

Serial Number: 09/439740 Page -2- up Art Unit: 1653

This statement is not to be interpreted as a representation that the cited publications are material, that an exhaustive search has been conducted, or that no other relevant information exists. Nor shall the citation of any publication herein be construed *per se* as a representation that such publication is prior art. Moreover, Applicants understand that the Examiner will make an independent evaluation of the cited publications.

In accordance with 37 CFR §1.97(d)(2) and §1.17(p), please charge the \$180.00 submission fee to our Deposit Order Account No. 12-0080. Please charge any necessary additional fees or credit any overpayments to our Deposit Order Account No. 12-0080.

Respectfully submitted,

LAHIVE & COCHFIELD, LLP

Debra J. Milasincic, Esq. Registration No. 46,931 Attorney for Applicants

28 State Street Boston, MA 02109 (617) 227-7400

Date: October 30, 2002

GAD/DJM/krj Enclosures

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	A1	4,841,026	06/89	Van Beveren	et al.	530	394			
	A2	5,026,651	06/91	Bowman et al	1	435	320	1		_

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	Country	CLASS	SUBCLASS	TRANS	TRANSLATION	
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	A3	EP 0 307 247	03/89	EPO					
ĺ	A4	EP 0 309 787	04/89	EPO		-			

OTHERS (including Author, Title, Date, Pertinent Pages, Etc.)

A5	Adrian, G.S. et al., "The human transferrin gene: 5' region contains conserved sequences which match the control elements regulated by heavy metals, glucocorticoids and acute phase reaction" <i>Gene</i> , vol. 49, pp. 167-175, 1986.
A6	Aldred, A. et al., "Synthesis of Rat Transferrin in Escherichia coli Containing a Recombinant Bacteriophage," Biochem. Biophys. Res. Commun., vol. 122, No. 3, pp. 960-965, Aug. 16, 1984.
A7	Baumstark, J.S. "A simple one-column procedure for the separation of swine and human serum transferrins," <i>J. Biochem. Biophys. Methods.</i> Vol. 14, No. 2: 59-70, Apr. 1987.
A8	Brown-Mason <i>et al.</i> "Physiological Levels of Binding " <i>Journal of Biol. Chem.</i> , vol. 259, No. 3 pp. 1866-1873 Feb. 10, 1984.
A9	Clark-Lewis, I. <i>et al.</i> , "Automated Chemical Synthesis of a Protein Growth Factor for Hemopoietic Cells, Interleukin-3" <i>Science</i> , vol. 231, pp. 134-139, 1986.
A10	Day, C.L. <i>et al.</i> , "Studies of the N-terminal Half of Human Lactoferrin Produced from the Cloned cDNA Demonstrate That Interlobe Interactions Modulate Iron Release" <i>J. Bio. Chem.</i> , vol. 267, No. 20, pp. 13857-13862, Jul. 15, 1992.
A11	Fischbach, K., "Expression of Chimeric Human Transferrin Genes <i>In Vitro</i> " <i>J. Neuroscience Res.</i> , vol. 27, pp. 633-641, 1990.
A12	Funk, W.D. <i>et al.</i> , "Expression of the Amino-Terminal Half-Molecule of Human Serum Transferrin in Cultured Cells and Characterization of the Recombinant Protein" <i>Biochemistry</i> , vol. 29, pp. 1654-1660, 1990.
A13	Hershberger, C.L. et al., "A Cloned Gene for Human Transferrin" Annals New York Academy of Sciences, vol. 646, pp. 140-154, 1991.
A14	III, C. et al., "Species Specificity of Iron Delivery in Hybridomas" In Vitro Cell. & Devel. Biol., vol. 24, pp. 413-419, 1988.
A15	Ikeda, R. A. <i>et al.</i> , "Production of human serum transferrin in <i>Escherichia coli</i> " <i>Gene</i> , vol. 117, pp. 265-269, 1992.
A16	Jeltsch et al., "The Complete Nucleotide Sequence " Eur. J. Biochem., vol. 122 pp. 291-295, 1982.

Examiner	Date Considered
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*EXAMINER:	Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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OTHERS (including Author, Title, Date, Pertinent Pages, Etc.)

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	B1		Lineback-Zins, J. <i>et al.</i> "Preparation and Characterization of an NH ₂ -terminal Fragment of Human Serum Transferrin Containing a Single Iron-binding Site" <i>J. Biol. Chem.</i> , vol. 255, No. 2, pp. 708-713, 1980.
	B2		MacGillivray, R.T.A. et al., "The Primary Structure of Human Serum Transferrin" J. Biol. Chem., vol. 258, No. 6, pp. 3543-3553, Mar. 25, 1983.
TO JOE	B3		Mason, A.B. <i>et al.</i> , "Efficient Production and Isolation of Recombinant Amino-Terminal Half-Molecule of Human Serum Transferrin from Baby Hamster Kidney Cells" <i>Protein Expression and Purification</i> , vol. 2, pp. 214-220, 1991.
3	B4		Mason, A.B. <i>et al.</i> , "Expression of Glycosylated and Nonglycosylated Human Transferrin in Mammalian Cells. Characterization of the Recombinant Proteins with Comparison to Three Commercially Available Transferrins" <i>Biochem.</i> , vol. 32, pp. 5472-5479, 1993.
	B5		McKnight, G.S. <i>et al.</i> , "Expression of the Chicken Transferrin Gene in Transgenic Mice" <i>Cell</i> , vol. 34, pp. 335-341, Sep. 1983.
	B6		Sigma Chemical Co., Catalog, p. 1177, Feb. 1986.
	В7		Stowell, K.M. <i>et al.</i> , "Expression of cloned human lactoferrin in baby-hamster kidney cells" <i>Biochem. J.</i> , vol. 276, pp. 349-355, 1991.
~	B8		Titeux, M. et al., "The Role of Iron in the Growth of Human Leukemic Cell Lines" J. Cell. Physiol., vol. 121, pp. 251-256, 1984.
	B9		Uzan, G. <i>et al.</i> , "Molecular Cloning and Sequence Analysis of cDNA for Human Transferrin" <i>Biochem. Biophys. Res. Commun.</i> , vol. 119, No. 1, pp. 273-281, Feb. 29, 1984.
	B10		Wang, Y. <i>et al.</i> , "Preliminary Crystallographic Analyses of the N-terminal Lobe of Recombinant Human Serum Transferrin" <i>J. Mol. Biol.</i> , vol. 227, pp. 575-576, 1992.
	B11		Woodworth, R.C. <i>et al.</i> , "Expression and Initial Characterization of Five Site-Directed Mutants of the N-Terminal Half-Molecule of Human Transferrin" <i>Biochem. (Reprint)</i> , vol. 30, pp. 10824-10829, 1991.
	B12		Woodworth, R.C. <i>et al.</i> , "Recombinant Human Transferrin N-terminal Half-Molecule: Characterization and NMR Studies," <i>J. Cell Biochem Suppl.</i> ; vol.13 Part A: 31, 1989.
	B13		Woodworth, R.C. <i>et al.</i> , "Recombinant Human Transferrin N-terminal Half-Molecule: Characterization of Selectively Deuterated and Mutated Proteins," UCLA Symposium: The Inorganic Chemistry/Molecular Biology Interface, Feb. 24-Mar. 1, 1990.
	B14		Yang, F. et al., "Human transferrin: cDNA characterization and chromosomal localization" Proc. Natl. Acad. Sci. USA, vol. 81, pp. 2752-2756, May 1984.
	B15		Zak, O. et al., (1985) "Preparation and properties of a single-sited fragment from the C-terminal domain of human transferrin", <i>Biochima et Biophysica Acta</i> , vol. 829, pp. 348-353.

Examiner	Date Considered
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